

## WHAT IS CLAIMED IS:

1. An ultrasonic nebulizer for producing high-volume sub-micron droplets, comprising:

an ac/dc converter for rectifying an ac current to a dc current and  
5 providing a dc voltage;

an oscillator circuit powered by said dc voltage for producing an oscillation signal with a frequency larger than or equal to 3MHz;

an amplifying device being connected to said oscillator circuit for amplifying the oscillation signal;

10 a nebulization chamber having a lower face for holding a liquid to be nebulized; and

at least one piezoelectric ceramic oscillator formed on the lower face of said nebulization chamber and being electrically connected to the amplified signal to provide an ultrasonic output to cause nebulization for producing  
15 high-volume sub-micron droplets.

2. The ultrasonic nebulizer for producing high-volume sub-micron droplets as claimed in claim 1, wherein, the ac/dc converter comprises a register and four diodes forming a Whetstone bridge for rectifying the ac current.

20 3. The ultrasonic nebulizer for producing high-volume sub-micron droplets as claimed in claim 1, wherein, the oscillator circuit comprises a plurality of resistors, a plurality of capacitors, a variable resistor and an oscillator for producing the oscillation signal.

4. The ultrasonic nebulizer for producing high-volume sub-micron  
25 droplets as claimed in claim 1, wherein, the amplifying device comprises a

resistor, a plurality of capacitors, a plurality of inductances, a diode, and a power amplified transistor for amplifying the oscillation signal.

5. The ultrasonic nebulizer for producing high-volume sub-micron droplets as claimed in claim 1, wherein, the frequency of the oscillation signal is equal to or large than 3MHz.